

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,023	09/10/1999	BELISARIO DAVILA ALANIS	041-468-L	3630
27201	7590	09/23/2004	EXAMINER	
UNISYS CORPORATION OFFICE OF GENERAL COUNSEL 10850 VIA FRONTERA M/S 1000 SAN DIEGO, CA 92127			KISS, ERIC B	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/394,023	Applicant(s) ALANIS, BELISARIO DAVILA	
	Examiner Eric B. Kiss	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,8,12,14,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,8,12,14,16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The reply filed 26 May 2004 has been received and entered. Claims 1, 4, 8, 12, 14, 16, and 17 are pending.

Oath/Declaration

2. The substitute Declaration filed 28 May 2004 has been received and entered. The previous objection to the Declaration, as detailed in the previous Office action, is withdrawn in view of Applicant's submission of a compliant substitute Declaration.

Response to Amendment

3. The amendment filed 26 May 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. §132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

- a) Applicant has changed "one-dimensional array" to "singly two-dimensional array" on page 30, in line 34 of the specification.
- b) Applicant has indicated an intent to change "USE ONE-DIMENSIONAL ARRAY" to "USE FIRST TWO-DIMENSIONAL ARRAY" in the boxes labeled "(vm1)" and

Art Unit: 2122

“ivg3) in Figures 7C and 7D, respectively. Applicant’s drawing corrections do not comply with 37 CFR §1.121(d). However, the Examiner notes that such changes to Figures 7C and 7D, if submitted in compliant drawing corrections, would be formally objected to as introducing new matter into the disclosure.

It is noted that Applicant has attempted to indicate support for these amendments in the originally filed specification (see Applicant’s arguments on p. 32, in paragraphs 2-3). However, the sections relied upon from page 6, lines 5 and 19-20 appear to only provide support for dual two-dimensional arrays. Further, although Applicant has stated,

Then, at page 6 line 25, it was seen in the original specification --- a selection is made as to use of a **single two-dimensional array** or a dual two-dimensional array for buffer loading [emphasis added by the Examiner],

the cited section of the original specification actually states,

a selection is made as to the use of a **single dimensional array** or a dual two-dimensional array for buffer loading [emphasis added by the Examiner].

It is further noted that Applicant’s originally filed claims, while reciting “...choosing single or dual two-dimensional array means...” (see, for example, originally filed claim 1), do not sufficiently justify the addition of the new matter discussed above because the disclosure in the claim is not sufficiently specific and detailed to support the necessary amendment of the drawing and description (see MPEP §608.01(I)).

Applicant is required to cancel the new matter in the reply to this Office Action.

Art Unit: 2122

4. Applicant's amendments to the drawings are not in compliance with 37 CFR §1.121(d).

Accordingly, the objections to the drawings, as detailed in the previous Office action, are maintained and reproduced below.

5. Applicant's amendments to the specification appropriately address the objections to the specification as detailed in the previous Office action. Accordingly, these objections are withdrawn in view of Applicant's amendments.

6. Applicant's amendments to the claims appropriately address the objections to the claims as detailed in the previous Office action. Accordingly, these objections are withdrawn in view of Applicant's amendments.

Admitted Prior Art

7. The following statements are taken to be admitted prior art:

It is well-known in the computer art that a Central Processing Unit can assess the number of bytes to be downloaded and count them in order to allow the branch point to decide whether a single two-dimensional array will do, or if a dual two-dimensional array is needed [see Applicant's remarks on p. 29].

The Central Processing Unit is commonly known to be able to count the number of bytes to be downloaded and from this, to select the appropriate number of buffer arrays needed to accommodate the number of bytes involved. These type of operations are already well-known in the state of the art [see Applicant's remarks on p. 29].

Art Unit: 2122

Response to Arguments

8. Applicant's admission of prior art (see above) appropriately addresses the rejection of claims 1, 4, 12, and 14, under 35 U.S.C. §112, first paragraph, based on the enablement requirement.

Applicant's Appendix I appears to suggest that Applicant's claimed invention was reduced to practice and embodied in a product or service available to the public more than one year prior to the filing date of the instant application. Applicant is formally required to clarify the exact nature and extent of any public use or sale as set forth below in the Requirement for Information under 37 CFR §1.105 and a rejection of all pending claims under 35 U.S.C. §102(b). Applicant is in the best position to address this newly raised issue with an appropriate response.

Requirement for Information - 37 CFR § 1.105

9. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the Examiner has determined is reasonably necessary to the examination of this application.

In response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter.

Art Unit: 2122

10. In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in Applicant's disclosure.

11. The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the Applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

12. The Applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the Applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.

13. This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Drawings

14. Figures 1A, 1B, 1C, 1D, 2, 3, 4, and 5, should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
15. The drawings are objected to because Fig. 6 illustrates a two-dimensional array inconsistent with the disclosure on pp. 24-25. Specifically, the Examiner believes that two typographical errors appear in Fig. 6:
- a) the n^{th} column of the array should presumably be labeled --8191-- instead of "8192". That is, 8,193 columns are illustrated (counting column 0) instead of the disclosed 8,192 columns
 - b) the descriptive label "ARRAY BUFFER [0:47, 0:8192]" in Fig. 6 should presumably read --ARRAY BUFFER [0:47, 0:8191]-- (see the discussion above).
16. The drawings are objected to because reference "A" (upper-left corner) in Fig. 7c should apparently read --I--.

Claim Rejections - 35 USC § 112

17. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2122

18. Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 16, limitations (d), (g), (i), and (j) each end with an open-ended limitation related to a parenthetical “(YES)”. It is unclear whether the “YES” in all of these phrases is intended to refer to the parenthetical assignments of “YES” and “NO” in limitation (d) or to the individual deciding, determining, and comparing steps recited in limitations (d), (g), (i), and (j). It is unclear what role the parenthetical labels “(YES)” and “(NO)” play in defining the scope of the claims. Further, as a semicolon follows each “...(YES)...” limitation, it is unclear which, if any, subsequent steps are to be performed in response to a “YES”. Further, since limitation (g) describes determining **that** said controller has been assigned for utilization, the remaining portion of limitation (g) appears to be redundant.

As per claim 17, the phrase “wherein said step (d) decision is NO” renders the claim indefinite because “NO” is not a valid method step. In the interest of compact prosecution, this limitation is interpreted as “wherein the result of said deciding in step (d) is deciding not to download said firmware file to said peripheral controller”. However, based on the discussion of claim 16 above, it is unclear from the subsequent recitation of “and if ... YES” in limitation (d) of claim 16 whether any of steps (e) through (r) are cancelled by such a decision in limitation (d). Additionally, claim 17 suffers similar problems to claim 16 in that the phrase “if ... YES ... then” is recited in each of limitations (dn1), (dn5), (dn7), and (dn9). It is unclear whether the “YES” in all of these phrases is intended to refer to the parenthetical assignments of “YES” and “NO” in limitation (d) of parent claim 16 or to the individual deciding, comparing, inquiring, and

Art Unit: 2122

checking steps recited in limitations (dn1), (dn5), (dn7), and (dn9). Further, as a semicolon follows each "... (YES)..." limitation, it is unclear which, if any, subsequent steps are to be performed in response to a "YES".

19. In view of the problems found in claims 16 and 17, as discussed above, the Examiner can form no meaningful interpretation or opinion of patentability, in view of prior art, for claims 16 and 17 in their present form. Lack of a rejection based on prior art for these claims should not be construed as an indication of impending allowability of these claims. Applicant is strongly encouraged to substantially amend claims 16 and 17 to define each deciding, comparing, inquiring, and checking step in more formal language, making it clear which subsequent steps are performed (or specifically not performed) in response. Applicant's use of ambiguous labels "(YES)" and "(NO)" continues to render the scope and meaning of these claims unascertainable.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2122

21. Claims 1, 4, 8, 12, 14, 16, and 17 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. Such is suggested by Applicant's submission and discussion of Appendix I, which is reproduced as an attachment to this Office action.

Regarding Appendix I, Applicant has stated,

Also attached in Appendix I is a cover sheet and certain designated coding of a 1994 DFAST software patch utilized by Applicant's employer, Unisys Corporation, which patch was in common use by software engineers to utilize branch points which can select one path of operations or another path of operations at a given branch point [see Applicant's remarks on p. 28, in the second-to-last paragraph].

Additionally, the attached Appendix I will indicate portions of the DFAST program in 1994 which will illustrate engineering usage of the selection of first, and first and second buffer arrays [see Applicant's remarks on p. 28, in the last paragraph, continuing onto p. 29].

Additionally, the source code documentation in Appendix I suggests that the DFAST utility was used to load microcode to SCSI Bus Controllers (SBC) and/or SCSI disk drives for the purpose of servicing customer (public) equipment.

In the portions of the source code made available to the Examiner, it is clear that the DFAST utility further included means for checking the pre-existing firmware in the target controller to determine whether an updated firmware version will be required for a subsequent download (see, for example, the call to the USERMAINTREQUEST function near the top of the page labeled D28).

As stated above, Applicant is in the best position to clarify the exact nature and extent of the public use or sale of the DFAST utility and to clarify whether specifically claimed features of the instant invention were not embodied in the DFAST utility.

Conclusion

22. This Office action has an attached requirement for information under 37 CFR 1.105. A complete reply to this Office action must include a complete reply to the attached requirement for information. The time period for reply to the attached requirement coincides with the time period for reply to this Office action.

23. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (703) 305-7737. One or around October 28, 2004, Technology Center 2100 will be relocated to Alexandria, Virginia, and Examiner Kiss's telephone number will change to (571) 272-3699. The Examiner can normally be reached on Tue. - Fri., 7:15 am - 4:45 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552. On or around October 28, 2004, Technology Center 2100 will be relocated to Alexandria, Virginia, and Tuan Dam's phone number will change to (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 2122

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EBK/EBK
September 7, 2004



ANTONY NGUYEN-BA
PRIMARY EXAMINER

APPENDIX I

Attached are selected pages of Coding indicating known engineering capability for showing:

- (i) software programmable selection means for choosing a single or dual two-dimensional array means —
- (ii) means for selecting the appropriate number of array means of said first and second two-dimensional buffer array means —

The implementation factors are shown in the attached pages D1, D2, D28, D29 and D30 in the attached excerpts of the DFAST program download in multiple chunks which was shown in documents with a 1994 copyright notice.

```

$$ VERSION 90.032.001
$$ SET STACK LIMIT 100
$$ RESET LIST XREF
$$ SET VERSION 01.005.000
$$ SET OMIT
* PATCHFOR DOWNLOAD IN MULTIPLE CHUNKS
#####00014000
*
*      Class      |      Unisys      |
*
*      #####      | This material is restricted and proprietary to the Unisys Corporation and is not to be reproduced, shown, or disclosed outside the Unisys Corporation. Customer Services Engineering restricted and proprietary data is furnished solely for use by Unisys personnel in servicing customer's equipment.
*      ##          |
*      ##          |
*      ##          |
*      ##          |
*      ##          |
*      ##          |
*      ##          |
*      ##          |
*      #####      | This document is the property of and shall be returned to Unisys Corporation, One Unisys Place, Detroit, MI 48232.
*
*      Material    | Copyright (C) 1994.
*
#####00036000
$$ PAGE
#####00038000
*
*      T A R G E T / F W L O A D
*
*      Patch History
*
#####00044000
4/94 Initial version. Will download A-code files to SBC controllers and SCSI Disk Drives.
4/94 Changes - Qualification phase for official CSPO release 01.001.
5/94 Add 'Express Mode' for engineering (DISKs only) release 01.002.
6/94 Change location of some display statements. --- release 01.002.
10/94 Fixed seg array error in Verifyfile procedure. release 01.002.
#####00049000
DOWNLOAD FIRMWARE to A-SERIES TARGETS (DFAST)
#####00052000
#####00053000
#####00054000
#####00055000
#####00056000
#####00057000
#####00058000
#####00059000
#####00060000
#####00061000
#####00062000
#####00063000
#####00064000
#####00065000
#####00066000
#####00067000
#####00068000
#####00069000
#####00070000
#####00071000
#####00072000
#####00073000
#####00074000
#####00075000
#####00076000
#####00077000

Load:
-----

To operate, two basic elements must be present: an SBC controller or SCSI disk drive, and a microcode file on disk or tape. The microcode must reside on a unit served by a different controller or disk than the one being initialized. If a "critical unit" exists on the string served by the controller being initialized and there is only one path to that critical unit, the system will reject the attempt to download the microcode.

```


1) Step one is to determine the code file's capability by having the user enter a file name. Normal Family Substitution rules are in effect. If the file cannot be found, the user is prompted to enter another file name. The file name may include an "ON <family>" in the file declaration if it resides on disk (e.g., (UCODE)XYZ/123 ON MYPACK). If the file resides on tape, the file name only would be entered (e.g., SCZFRM).

If the code file is not a valid SBC or disk drive Acode file, the file is rejected and the user is prompted to enter another file name.

2) Step two is to determine the SBC controller or drive capability. The user enters a SBC or drive number and the utility reads the unit's attributes. If the SBC or drive number does not represent the correct target, or if the target attributes do not match those of the Acode file, the user is prompted to enter a new target number or 'Quit'. The SBC controller or drive must be reserved.

>>>> There may be no way to prove that the SBC controller controls any given drive or that it is the only path to the drive or that another path exists! The User should do an "OL" on the ODT to verify the paths available for the target.

Verifyfile:

Verify is simpler than Load since no SBC or drive is involved. The user answers the file name prompt and the Verify routine used by Load is called to generate a report on the attributes associated with that file.

Verify allows the user to cycle through multiple, potential A-code files until 'Quit' is entered.

\$\$ POP OMIT
BEGIN

Structure Generating Declarations

```

DEFINE
  OVHD          = 12 #           % At front of each code segment
  ,XSTATBYTES   = 254 #         % Read Unit Status return length
  ,EIGHTK        = 8192 #
  ,ENDSGD        = #
  ,SYSCAP        = 393216 #
  ,MAXELEMENTS   = 1 #           % MAX ELEMENT PER DIMENSION
  ,MAXROWS       = 48 #         % MAX NUMBER OF ROWS
;

```

```

FILE
  CODE( KIND      = TAPE,          % UNKNOWN TYPE
  **** LABELKIND  = UNLABELLED, % READ ONLY
  FILEUSE         = IN,
  OPTIONAL        = TRUE,
  NEWFILE         = FALSE,
  DEPENDENTSPECS  = TRUE)
,LINE( KIND       = PRINTER,
  FILEUSE         = OUT,
  FRAME SIZE      = 8,
  MAXRECSIZE      = 132)
,RMT( KIND        = REMOTE,
  FILEUSE         = IO,
  BLOCKSTRUCTURE  = EXTERNAL,
  FRAME SIZE      = 8,
  MAXRECSIZE      = 132)
;

```

2 DIM. DIRECT EBCDIC ARRAY
3 BUFFER IMLBUF2 [0:0,0:0] % To be resized
 ,IMLBUF3 [0:0,0:0] % To be resized
 ,IMLBUF [0:0]

00078000
00079000
00080000
00081000
00082000
00083000
00084000
00085000
00086000
00087000
00088000
00089000
00090000
00091000
00092000
00093000
00094000
00095000
00096000
00097000
00098000
00099000
00100000
00101000
00102000010020003
00103000010020003
00104000
00105000
00106000
00107000
00108000
00109000
00110000
00111000
00112000
00113000
00114000
00115000
00116000
00117000
00118000
00119000
00120000
00120500010040006
0012060001.005.000
0012080001.005.000
00121000
00122000
00123000
00124000
00125000
00126000
00127000
00128000
00129000
00130000
00131000
00132000
00133000
00134000
00135000
00136000
00137000
00138000
00139000
00140000
00141000
00142000010040006
0014220001.005.001
00142500010040006
00143000

2 DIMENSIONAL
BUFFER

% Get attributes of Target

```

RSLT := USERMAINTREQUEST(CTLUNIT,INQUIRY,23,192,0,
                          SHORTBUF,MRD,HDPRESULT);

```

```

IF RSLT > 0 THEN
  BEGIN

```

```

    SHOW("MCP interface error " C
          RSLT FOR * DIGITS C
          " to get target" C
          " attributes for SCSI drive " C
          CTLUNIT FOR * DIGITS,TRUE);

```

```

    SHOWRSLT(RSLT,ATTRIBUTESV);
    SHOW("Check TARGET for problem",TRUE);

```

```

    IF NOT RELEASETARGET (OPTODO) THEN
      GO GRANDXIT

```

```

    ELSE
      GO NEXTDRIVE;

```

END;

SHOWINQUIRYDATA;

```

IF EXPRESSMODE THEN
  REPLACE OLDFWLVL [0] BY TSERVOREVLVL FOR NEWFWLEVELNG;

```

% Get code file & match header rec. info against Target info.

```

IF TSERVOREVLVL = FNEWFWLEVEL FOR NEWFWLEVELNG THEN
  BEGIN

```

```

    SHOW ("Servo FW levels of Target and File are the same.",TRUE);
    START "Do you still want to download the firmware? Enter YES or NO";

```

```

    PROMPT;
    IF PL NEQ "Y" THEN

```

```

      BEGIN
        SHOW ("Download will not take place for target " C
              CTLUNIT FOR * DIGITS, TRUE);

```

```

        IF NOT RELEASETARGET (OPTODO) THEN
          GO GRANDXIT

```

```

        ELSE
          GO NEXTDRIVE;

```

```

        END
        ELSE REPLACE SAVEFWLVL [0] BY 48"00" FOR OLDFWLVLNG; % NO FORMAT

```

```

      ELSE

```

```

        IF NOT COMPSERVOFWLVL THEN % COMPARE FW LEVELS OF FILE VS. TARGET
        IF NOT RELEASETARGET (OPTODO) THEN

```

```

          GO GRANDXIT

```

```

        ELSE
          GO NEXTDRIVE;

```

```

% If drive needs to be formatted after firmware download, get
% permission before downloading the code.
% Each FW level area in file = 8 bytes. If byte 0 neq 48"00", drive
% must be formatted after code is loaded.

```

```

IF SAVEFWLVL [0] NEQ 48"00" THEN % Drive needs formatting
  IF NOT OKTOFORMAT THEN

```

```

    IF NOT RELEASETARGET (OPTODO) THEN
      GO GRANDXIT

```

```

    ELSE
      GO NEXTDRIVE;

```

% Request function

```

IF NOT EXPRESSMODE THEN
  SHOW("Starting to download code to drive " C
        CTLUNIT FOR * DIGITS,TRUE);

```

```

IF FCODEBYTES > SYSCAP THEN
  BEGIN

```

```

    NUMBROFIO := FCODEBYTES DIV EIGHTK;

```

```

    NUMBROFIO := * + 1;

```

```

    SHOW(" NUMBROFIO = " C NUMBROFIO FOR * DIGITS,TRUE);

```

0150201001.005.001
 0150202001.005.001
 0150203001.005.000
 0150204001.005.001
 0150205001.005.001
 0150206001.005.001
 0150207001.005.001
 0150208001.005.001
 0150209001.005.001
 0150210001.005.001
 0150211001.005.001
 0150212001.005.001
 0150213001.005.001
 0150214001.005.001
 0150215001.005.001
 0150216001.005.001
 0150217001.005.001
 0150218001.005.001
 0150219001.005.001
 0150220001.005.000
 0150221001.005.001
 0150222001.005.001
 0150223001.005.000
 0150224001.005.001
 0150225001.005.001
 0150226001.005.001
 0150241001.005.001
 0150242001.005.000
 0150243001.005.001
 0150244001.005.000
 0150245001.005.001
 0150246001.005.001
 0150247001.005.001
 0150248001.005.001
 0150249001.005.001
 0150250001.005.001
 0150251001.005.001
 0150252001.005.001
 0150253001.005.001
 0150254001.005.001
 0150255001.005.001
 0150256001.005.001
 0150257001.005.001
 0150258001.005.001
 0150259001.005.000
 0150260001.005.001
 0150261001.005.001
 0150262001.005.001
 0150263001.005.001
 0150264001.005.001
 0150265001.005.001
 0150266001.005.001
 0150267001.005.001
 0150268001.005.001
 0150269001.005.001
 0150270001.005.001
 0150271001.005.001
 0150272001.005.001
 0150273001.005.001
 0150274001.005.001
 0150275001.005.001
 01503000
 01504000
 01504500010020003
 01505000010020003
 01506000010020003
 0150610001.005.000
 01506200010040006
 01506300010040006
 0150632001.005.000
 0150635001.005.000

DECISION
 ON
 SYSTEM
 BYTES

```

SIZEOFLSTIO := FCODEBYTES MOD EIGHTK;
SHOW(" SIZEOFLSTIO = " C SIZEOFLSTIO FOR * DIGITS,TRUE);
FIRSTTIME := TRUE;
OFFSET := 0;
I := 0;
J := 0;
DO
  BEGIN
    IF J <= 47 THEN
      BEGIN
        RSLT := USERMAINTREQUEST(CTLUNIT,DOWNLOADMODE7,8192,OFFSET,0,
          IMLBUF2[I,*],MRD,HDPRESULT);
        SHOW("1I = " C I FOR * DIGITS,TRUE);
        SHOW("1OFFSET = " C OFFSET FOR * DIGITS,TRUE);
        IF RSLT > 0 THEN
          BEGIN
            SHOWRSLT(RSLT,LOADSLAVEIMLV);
            SHOWMRDBITS;
            SHOWHDPRESULT;

            SHOW("<< Microcode(1) NOT loaded!! >>",TRUE);
            IF NOT RELEASETARGET (OPTODO) THEN
              GO GRANDXIT;
          END;
        END
      ELSE
        BEGIN
          IF FIRSTTIME THEN
            I := 0;
            FIRSTTIME := FALSE;
            RSLT := USERMAINTREQUEST(CTLUNIT,DOWNLOADMODE7,8192,OFFSET,0,
              IMLBUF3[I,*],MRD,HDPRESULT);
            SHOW("2I = " C I FOR * DIGITS,TRUE);
            SHOW("2OFFSET = " C OFFSET FOR * DIGITS,TRUE);
            SHOW("2J = " C J FOR * DIGITS,TRUE);
            IF RSLT > 0 THEN
              BEGIN
                SHOWRSLT(RSLT,LOADSLAVEIMLV);
                SHOWMRDBITS;
                SHOWHDPRESULT;

                SHOW("<< Microcode(2) NOT loaded!! >>",TRUE);
                IF NOT RELEASETARGET (OPTODO) THEN
                  GO GRANDXIT;
                END;
              END
            UNTIL NUMBROFIOS = 0;
            SHOW(" NUMBROFIOS = " C NUMBROFIOS FOR * DIGITS,TRUE);
            SHOW(" I = " C I FOR * DIGITS,TRUE);
            SHOW(" J = " C J FOR * DIGITS,TRUE);
            SHOW(" OFFSET = " C OFFSET FOR * DIGITS,TRUE);
            IF J < 47 THEN
              BEGIN
                RSLT := USERMAINTREQUEST(CTLUNIT,DOWNLOADMODE7,8192,OFFSET,0,
                  IMLBUF2[I,*],MRD,HDPRESULT);
                SHOW("3I = " C I FOR * DIGITS,TRUE);
                SHOW("3OFFSET = " C OFFSET FOR * DIGITS,TRUE);
                IF RSLT > 0 THEN
                  BEGIN
                    SHOWRSLT(RSLT,LOADSLAVEIMLV);
                    SHOWMRDBITS;
                    SHOWHDPRESULT;

                    SHOW("<< Microcode(3) NOT loaded!! >>",TRUE);
                    IF NOT RELEASETARGET (OPTODO) THEN
                      GO GRANDXIT;
                    END;
                  END;
                END;
              END
            END;
            NUMBROFIOS := * - 1;
            OFFSET := * + EIGHTK;
            I := * + 1;
            J := * + 1;
          END
        END
      END
    UNTIL NUMBROFIOS = 0;
  END

```

```

01506400010040006
0150640201.005.000
0150640401.005.000
01506410010040006
01506415010040006
0150641601.005.000
01506420010040006
01506430010040006
0150643501.005.000
0150643601.005.000
01506440010040006
0150645001.005.000
0150645201.005.000
0150645401.005.000
0150645601.005.000
0150645801.005.000
0150646001.005.000
0150646201.005.000
0150646401.005.000
0150646601.005.000
0150646801.005.000
0150647001.005.000
0150647201.005.000
0150647401.005.000
0150647601.005.000
0150647801.005.000
0150648001.005.000
0150648201.005.000
0150648401.005.000
0150648601.005.000
0150648801.005.000
0150649001.005.000
0150649201.005.000
0150649401.005.000
0150649601.005.000
0150649801.002.006
0150650001.002.006
0150650201.002.006
0150650401.002.006
0150650601.002.006
0150650801.002.006
0150651001.005.000
0150651201.002.006
0150651401.002.006
0150651601.002.006
0150651801.005.000
0150652001.002.006
0150652201.002.006
0150652401.002.006
0150652601.005.000
0150652801.002.006
0150653001.005.000
0150653201.005.000
0150653401.005.000
0150653601.005.000
0150653801.005.000
0150654001.005.000
0150654201.005.000
0150654401.005.000
0150655001.005.000
0150655201.005.000
0150655401.005.000
0150655601.005.000
0150655801.005.000
0150656001.005.000
0150656201.005.000
0150656401.005.000
0150656601.005.000
0150656801.005.000
0150657001.005.000
0150657201.005.000

```

Choose 1st Two-Dimens
Array
393 216 Bytes

Choose 2nd Two
Dimens. Array
393 216 Bytes

```

        END;
    END
ELSE
    BEGIN
        RSLT := USERMAINTREQUEST(CTLUNIT, DOWNLOADMODE7, 4224, OFFSET, 0,
            IMLBUF3(I, *), MRD, HDPRESULT);
        SHOW("4I = " C I FOR * DIGITS, TRUE);
        SHOW("4OFFSET = " C OFFSET FOR * DIGITS, TRUE);
        SHOW("4J = " C J FOR * DIGITS, TRUE);
        IF RSLT > 0 THEN
            BEGIN
                SHOWRSLT(RSLT, LOADSLAVEIMLV);
                SHOWMRDBITS;
                SHOWHDPRESULT;

                SHOW("<< Microcode(4) NOT loaded!! >>", TRUE);
                IF NOT RELEASETARGET (OPTODO) THEN
                    GO GRANDXIT;
            END;
        END;
    END
ELSE
    RSLT := USERMAINTREQUEST(CTLUNIT, LOADSLAVEIMLV, FCODEBYTES, 0, 0,
        IMLBUF, MRD, HDPRESULT);
        SHOW("5I = " C I FOR * DIGITS, TRUE);
        SHOW("5OFFSET = " C OFFSET FOR * DIGITS, TRUE);
    IF RSLT > 0 THEN
        BEGIN
            SHOWRSLT(RSLT, LOADSLAVEIMLV);
            SHOWMRDBITS;
            SHOWHDPRESULT;

            SHOW("<< Microcode(5) NOT loaded!! >>", TRUE);
            IF NOT RELEASETARGET (OPTODO) THEN
                GO GRANDXIT
            ELSE
                GO NEXTDRIVE;
        END;
    END;

    IF EXPRESSMODE THEN
        SHOW("Download complete. Waiting 20 seconds for prom burn to " C
            CTLUNIT FOR * DIGITS, TRUE)
    ELSE
        SHOW("Download complete. Waiting 60 seconds for prom burn to " C
            CTLUNIT FOR * DIGITS, TRUE);
        SHOW("Do not power off or alter drive " C
            CTLUNIT FOR * DIGITS, TRUE);

        % The SCSI disk drive has now turned off its SCSI interface.
        % It won't come alive until after it has done the power up
        % confidence tests (approx. 60 seconds). The second ATTRIBUTES command
        % can then be issued to display the new firmware level. NOTE: If the
        % second ATTRIBUTES command is issued before the target sequences
        % (powers itself back up) the target will hang and the program will show
        % an error.

        IF NOT EXPRESSMODE THEN
            SHOW("00:10 - Waiting for prom burn to target " C
                CTLUNIT FOR * DIGITS, TRUE);
            TIMER := 0;

            IF NOT EXPRESSMODE THEN
                DO BEGIN
                    WHEN(10);
                    N := (TIMER:=+1)*10 + 10;          % Seconds
                    IF NOT EXPRESSMODE THEN
                        SHOWRSLT(RSLT, -N);
                    END UNTIL N >= 1*60;              % Drop dead time

                    IF EXPRESSMODE THEN
                        WAIT 20 SECONDS ONLY
                    WHEN (20);
                END
            END
        END

```

```

0150657401.005.000
0150657601.005.000
0150657801.005.000
0150658001.005.000
0150658201.005.000
0150658401.005.000
0150658601.005.000
0150658801.005.000
0150659001.005.000
0150660001.005.000
0150662001.005.000
0150664001.005.000
0150666001.005.000
0150668001.005.000
0150670001.005.000
0150672001.005.000
0150674001.005.000
0150676001.005.000
0150678001.005.000
0150680001.005.000
0150682001.002.006
0150684001.002.006
01507000
01508000010040006
0150820001.005.000
0150840001.005.000
01509000
01510000
01511000
01512000
01513000
01514000
0151500001.005.000
01516000
01517000
01518000
01519000
01520000
01521000
01521200010020003
01521400010020003
01521600010020003
01521800010020003
01522000010020003
01523000010020003
01524000
01525000
01526000
01527000
01528000
01529000
01530000
01531000
01532000
01533000
01534000
01534500010020003
01535000010020003
01536000010020003
01537000
01538000
01538500010020003
01539000
01540000
01541000
01541500010020003
01542000010020003
01543000
01543200010020003
01543400010020003
01543600010020003

```

